Contents Volume 34, 1987/1988

Research Papers

Petrology of crystal clots in the pumice of Mount St. Helens' March 19, 1982 eruption; Significant role of Fe-Ti oxide crystallization
C.M. Scarfe and T. Fujii (Tokyo, Japan) 1

Regional heat flow variations in the northern Michigan and Lake Superior region determined using the silica heat flow estimator
R. Vugrinovich (Lansing, MI, U.S.A.) 15

Heat flow measurements on the Bay of Plenty coast, New Zealand
B. Simpson (Rotorua, New Zealand) 25

A dynamic interpretation of Tristan da Cunha volcano, South Atlantic Ocean
L. Chevallier and W.J. Verwoerd (Stellenbosch, South Africa) 35

Some physical properties and melt structures in the system diopside-anorthite
H. Taniguchi (Osaka, Japan) and T. Murase (Kanagawa, Japan) 51

Lateral magma flow, caldera collapse, and a mechanism of large eruptions in Iceland
A. Gudmundsson (Reykjavik, Iceland) 65

Mapping of the surface temperature of Mount Etna and Vulcano Island using an airborne scanner radiometer
A. Tabbagh and J. Tabbagh (Pouilly-sur-Loire, France), and C. Dechambenoy (Palaiseau, France) 79

Identifying different regimes in eruptive activity: An application to Etna Volcano
F. Mulargia, P. Gasperini and S. Tinti (Bologna, Italy) 89

Fracturing associated with the 1977–1978 eruption of Usu volcano, north Japan, as revealed by geophysical measurements
R. Ballestracci (La Garde, France) and Y. Nishida (Sapporo, Japan) 107

A scenario of the 1883 Krakatau tsunami
I. Yokoyama (Sapporo, Japan) 123

Diffusion of trace elements during bottom crystallization of double-diffusive convection systems: The magnetitite layers of the Bushveld Complex
F.J. Kruger (Johannesburg, South Africa) and R. Smart (Rondebosch, South Africa) 133

Structural controls on the morphology of Galapagos shields
A.B. Cullen (Norman, OK, U.S.A.), A.R. McBirney (Eugene, OR, U.S.A.) and R.D. Rogers (Norman, OK, U.S.A.) 143

Research Papers

Explosive activity of the South Italian volcanoes during the past 80,000 years as determined by marine tephrochronology
M. Paterne, F. Guichard and J. Labeyrie (Gif-sur-Yvette, France) 153

Enhanced residence of submicron Si-rich volcanic particles in the lower stratosphere
F.J.M. Rietmeijer (Albuquerque, NM, U.S.A.) 173

Helium isotopes in geothermal and volcanic gases of the western United States, I. Regional variability and magmatic origin
J.A. Welhan, R.J. Poreda, W. Rison and H. Craig (La Jolla, CA, U.S.A.) 185

Helium isotopes in geothermal and volcanic gases of the western United States, II. Long Valley caldera
J.A. Welhan, R.J. Poreda, W. Rison and H. Craig (La Jolla, CA, U.S.A.) 201

Hydrothermal alteration and evolution of the Ohakuri hydrothermal system Taupo Volcanic Zone, New Zealand
R.C. Henneberger and P.R.L. Browne (Auckland, New Zealand) 211

The geochemistry of rock and water samples from Curtis Island volcano, Kermadec group, Southwest Pacific
I.E.M. Smith, R.N. Brothers, F.G. Muiriri and P.R.L. Browne (Auckland, New Zealand) 233

The role of selective alkali contamination in the evolution of recent historic lavas of Mt. Etna
R. Clocchiatti, J.-L. Joron and M. Treuil (Gif-sur-Yvette and Paris, France) 241

Basalt–basaltic andesite mixing at Mount Baker volcano, Washington, I. Estimation of mixing conditions
N.L. Green (Tuscaloosa, AL, U.S.A.) 251

Stress and fracture evolution in a cooling pluton: An example from Diamond Joe stock, western Arizona, U.S.A.
P.J. Gerla (Platteville, WI, U.S.A.) 267

Geochemistry and evolution of the calc-alkaline volcanic complex of Santorini, Aegean Sea, Greece
J.P.P. Huijsmans (Utrecht, The Netherlands), M. Barton (Columbus, OH, U.S.A.) and V.J.M. Salters (Cambridge, MA, U.S.A.) 283
Discrimination between volcanic earthquakes associated with central and lateral eruptions
V.M. Zobin (Petrapavlosk, U.S.S.R.) 307

Book Reviews
Petrogenesis of the Volcanic Rocks of the Karoo Province, by A.J. Erlank (Editor) — M. Barton 317
Mount Etna: The Anatomy of a Volcano, by D.K. Chester, A.M. Duncan, J.E. Guest and C.R.J. Kilburn — R.S. Thorpe 318